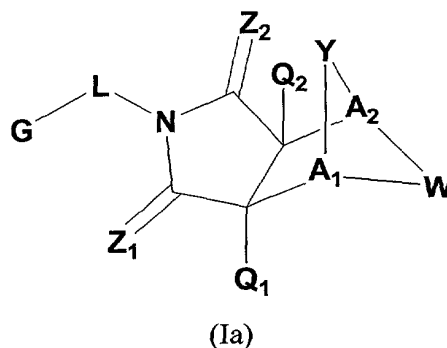


# Claims

We claim:

1. A compound of the following formula:

5



- wherein the symbols have the following meanings and are, for each occurrence,
- 10 independently selected:  
G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which is optionally substituted at one or more positions;  
Z<sub>1</sub> is O, S, NH, or NR<sup>6</sup>;  
Z<sub>2</sub> is O, S, NH, or NR<sup>6</sup>;
  - 15 A<sub>1</sub> is CR<sup>7</sup> or N;  
A<sub>2</sub> is CR<sup>7</sup> or N;  
Y is J-J'-J'' where J is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, J' is a bond or O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>, CR<sup>7</sup>R<sup>7'</sup>, R<sup>2</sup>P=O, R<sup>2</sup>P=S, R<sup>2</sup>OP=O, R<sup>2</sup>NHP=O, OP=OOR<sup>2</sup>, OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHNH, NHNR<sup>6</sup>, NR<sup>6</sup>NH, N=N, cycloalkyl or substituted cycloalkyl,
  - 20 cycloalkenyl or substituted cycloalkenyl, or heterocyclo or substituted heterocyclo, and J'' is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, where Y is not a bond; and  
W is CR<sup>7</sup>R<sup>7'</sup>—CR<sup>7</sup>R<sup>7'</sup>, CR<sup>7</sup>R<sup>7'</sup>—C=O, NR<sup>9</sup>—CR<sup>7</sup>R<sup>7'</sup>, N=CR<sup>8</sup>, N=N, NR<sup>9</sup>—NR<sup>9'</sup>, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein,
  - 25 when W is not NR<sup>9</sup>—CR<sup>7</sup>R<sup>7'</sup>, N=CR<sup>8</sup>, N=N, NR<sup>9</sup>—NR<sup>9'</sup>, or heterocyclo or



substituted heterocyclo, then J' must be O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>, OP=OOR<sup>2</sup>,  
 OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHNH, NHNR<sup>6</sup>, NR<sup>6</sup>NH, or N=N; or alternatively,  
 Y' is NR<sup>7</sup>-CR<sup>7</sup>R<sup>7</sup> and W' is CR<sup>8</sup>=CR<sup>8</sup>; or, alternatively,  
 Y' is CR<sup>7</sup>R<sup>7</sup>-C=O and W' is NR<sup>9</sup>-CR<sup>7</sup>R<sup>7</sup>;

- 5 Q<sub>1</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN, R<sup>1</sup>OC=O, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O,
- 10 HO-CR<sup>7</sup>R<sup>7</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup> or NR<sup>4</sup>R<sup>5</sup>;
- Q<sub>2</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN, R<sup>1</sup>OC=O, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O,
- 15 HO-CR<sup>7</sup>R<sup>7</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup> or NR<sup>4</sup>R<sup>5</sup>;
- L is a bond, (CR<sup>7</sup>R<sup>7</sup>)<sub>n</sub>, NH, NR<sup>5</sup> or NR<sup>5</sup>(CR<sup>7</sup>R<sup>7</sup>)<sub>n</sub>, where n = 0-3;
- R<sup>1</sup> and R<sup>1</sup>' are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 20
- R<sup>2</sup> is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 25
- R<sup>3</sup> and R<sup>3</sup>' are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl,
- 30



cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, hydroxylamine, hydroxamide, alkoxy or substituted alkoxy, amino,  $\text{NR}^1\text{R}^2$ , thiol, alkylthio or substituted alkylthio;

- 5  $\text{R}^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ ,  
 10  $\text{SO}_2\text{OR}^1$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ ;

- $\text{R}^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ ,  $\text{SO}_2\text{R}^1$ ,  
 15  $\text{SO}_2\text{OR}^1$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ ;

- $\text{R}^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $\text{OR}^1$ ,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ ,  $\text{SO}_2\text{R}^1$ ,  $\text{SO}_2\text{OR}^1$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ ;

- $\text{R}^7$  and  $\text{R}^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN,  $\text{OR}^1$ , nitro, hydroxylamine, hydroxylamide, amino,  $\text{NHR}^4$ ,  $\text{NR}^2\text{R}^5$ ,  $\text{NOR}^1$ , thiol, alkylthio  
 25 or substituted alkylthio,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{OC}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ ,  $\text{SO}_2\text{R}^1$ ,  $\text{SOR}^1$ ,  
 30  $\text{PO}_3\text{R}^1\text{R}^{1'}$ ,  $\text{R}^1\text{R}^{1'}\text{NC}=\text{O}$ ,  $\text{C}=\text{OSR}^1$ ,  $\text{SO}_2\text{R}^1$ ,  $\text{SO}_2\text{OR}^1$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ , or, wherein



$A_1$  or  $A_2$  contains a group  $R^7$  and  $W$  contains a group  $R^7$ , said  $R^7$  groups of  $A_1$  or  $A_2$  and  $W$  together form a heterocyclic ring;

$R^8$  and  $R^{8'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, nitro, halo, CN,  $OR^1$ , amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , alkylthio or substituted alkylthio,  $C=OSR^1$ ,  $R^1OC=O$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $R^1R^{1'}NC=O$ ,  $SO_2OR^1$ ,  $S=OR^1$ ,  $SO_2R^1$ ,  $PO_3R^1R^{1'}$ , or  $SO_2NR^1R^{1'}$ ; and

$R^9$  and  $R^{9'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1OC=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;

with the provisos that:

- (1) when  $Y'$  is -O-,  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is  $-CH_2-CH_2-$ , and  $A_1$  and  $A_2$  are CH, then G-L is not phenyl, monosubstituted phenyl or phenyl which is substituted with two or more of the following groups: methoxy, halo,  $NO_2$ , methyl,  $CH_3-S-$ , OH,  $CO_2H$ , trifluoromethyl,  $-C(O)-C_6H_5$ ,  $NH_2$ , 4-7-epoxy, hexahydro-1H-isoindole-1,3(2H)dione, or  $-C(O)-CH_3$ ;
- (2) when  $Y'$  is -O-,  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is  $CH_2-CH_2$ , and one of  $A_1$  and  $A_2$  is CH and the other is  $CR^7$ , then G-L is not unsubstituted phenyl;
- (3) when  $Y'$  is -O-,  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is  $CH_2-CH_2$ , and one of  $A_1$  and  $A_2$  is CH and the other is  $C-CH_3$ , then G-L is not phenyl substituted with chloro and/or methyl;



- (4) when Y' is -O- or -S-,  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is  $CH_2-CH_2$ , and one of  $A_1$  and  $A_2$  is CH and the other is CH or C-alkyl, then G-L is not N-substituted piperazine-alkyl- or N-substituted imidazolidine-alkyl-;
- 5 (5) when Y' is -O-;  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is  $CH_2-CH_2$ , and  $A_1$  and  $A_2$  are CH, then G-L is not oxazole or triazole;
- (6) when Y' is -O-;  $Q_1$  and  $Q_2$  are hydrogen or methyl,  $Z_1$  and  $Z_2$  are O,  $W'$  is  $CH_2-CH_2$ , and  $A_1$  and  $A_2$  are CH or C- $CH_3$ , then G-L is not thiazole or substituted thiazole;
- 10 (7) when Y' contains a group J' selected from S, S=O,  $SO_2$ , NH,  $NR^7$ ,  $R^2P=O$ ,  $R^2P=S$ ,  $R^2OP=O$ ,  $R^2NHP=O$ ,  $OP=OOR^2$ ,  $OP=ONHR^2$ ,  $OSO_2$ ,  $NHNH$ ,  $NHR^6$ ,  $NR^6NH$  or  $N=N$ ,  $W'$  is  $CR^7R^{7'}$ - $CR^7R^{7'}$ , and  $Z_1$  and  $Z_2$  are O, then G-L is not unsubstituted phenyl;
- (8) when Y is  $NR^7$ ,  $W'$  is unsubstituted or substituted phenyl, and  $Q_1$  and  $Q_2$  are hydrogen, then  $Z_1$  and  $Z_2$  are not O;
- 15 (9) when Y' is —O—,  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is dihydroisoxazole bearing an optionally substituted phenyl group, and  $A_1$  and  $A_2$  are CH, then G-L is not unsubstituted phenyl or dichlorophenyl;
- (10) when Y' is O,  $Q_1$  and  $Q_2$  are hydrogen,  $Z_1$  and  $Z_2$  are O,  $W'$  is ethylene oxide, and  $A_1$  and  $A_2$  are CH, then G-L is not methylphenyl or chlorophenyl;
- 20 (11) when Y' is  $NR^7-CR^7R^{7'}$ ,  $W'$  is  $CR^8=CR^8$ ,  $Q_1$  and  $Q_2$  are hydrogen,  $A_1$  and  $A_2$  are CH, C- $CH_3$ , C- $CH_2-C_6H_5$  or C- $CH_2-CH_3$ , and  $Z_1$  and  $Z_2$  are O, then G-L is not unsubstituted phenyl, monosubstituted phenyl or methylpyridinyl;
- (12) when Y' is  $CR^7R^{7'}-C=O$ ,  $W'$  is  $NR^9-CR^7R^{7'}$ ,  $Q_1$  and  $Q_2$  are hydrogen,  $A_1$  and  $A_2$  are CH, and  $Z_1$  and  $Z_2$  are O, then G-L is not unsubstituted phenyl;
- 25 (13) when Y' is  $CHR^{7'}-NR^7$  where  $R^{7'}$  is unsubstituted phenyl, methoxy or ethoxy and  $R^7$  is unsubstituted phenyl, methyl or -C(O)- $C_6H_5$ ,  $W'$  is dimethoxyphenylene or unsubstituted phenylene,  $Z_1$  and  $Z_2$  are O,  $Q_1$  and  $Q_2$  are hydrogen,  $A_1$  and  $A_2$  are CH, C-CN, C-C(O)- $C_6H_5$ , or -C(O)-dimethoxyphenyl, then G-L is not unsubstituted phenyl;
- 30 (14) the compound of formula Ia is not 6,10-epithio-4H-thieno-[3',4':5,6]cyclooct[1,2-f]isoindole-7,9(5H,8H)dione, 8-(3,5-dichlorophenyl)-



6,6a,9a,10,11,12,-hexahydro-1,3,6,10-tetramethyl-2,2,13-trioxide,  
(6R,6aR,9aS,10S);

(15) when Y' is O, W' is  $-\text{CH}_2-\text{CH}_2-$ ,  $\text{Q}_1$  and  $\text{Q}_2$  are methyl,  $\text{Z}_1$  and  $\text{Z}_2$  are O,  
and  $\text{A}_1$  and  $\text{A}_2$  are CH, then G-L is not unsubstituted phenyl, phenyl

5 substituted with methoxy, phenyl-alkyl-, or morpholine-alkyl, nor is the  
compound bridged to itself through a group L which is alkylene to form a bis  
compound;

(16) when Y' is  $-\text{O}-$ ,  $\text{Q}_1$  and  $\text{Q}_2$  are hydrogen,  $\text{Z}_1$  and  $\text{Z}_2$  are O, W' is  $\text{CR}^7\text{R}^{7'}$ -  
 $\text{CR}^7\text{R}^{7'}$ , and  $\text{A}_1$  and  $\text{A}_2$  are CH, then G-L is not an unsubstituted phenyl group;  
10 and

(17) when Y' is  $-\text{O}-$ ,  $\text{Q}_1$  and  $\text{Q}_2$  are hydrogen,  $\text{Z}_1$  and  $\text{Z}_2$  are O, W' is  
cyclopentyl, cyclohexyl, 3-phenyl-2-isoxazoline or  $\text{CR}^7\text{R}^{7'}-\text{CR}^7\text{R}^{7'}$  where  $\text{R}^7$   
and  $\text{R}^{7'}$  are each independently defined as Cl, Br, H and 4-butyrolactone and  
 $\text{R}^7$  and  $\text{R}^{7'}$  are not all simultaneously H, and  $\text{A}_1$  and  $\text{A}_2$  are CH, then G-L is not  
15 an unsubstituted naphthyl ring or a monosubstituted phenyl ring, where said  
substituent is methoxy, Br, Cl,  $\text{NO}_2$ , methyl, ethyl,  $\text{CH}_2$ -phenyl, S-phenyl, or  
O-phenyl.

## 2. The compound of Claim 1 wherein

20 G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which  
is optionally substituted at one or more positions;

$\text{Z}_1$  is O, S, NH, or  $\text{NR}^6$ ;

$\text{Z}_2$  is O, S, NH, or  $\text{NR}^6$ ;

$\text{A}_1$  is  $\text{CR}^7$  or N;

25  $\text{A}_2$  is  $\text{CR}^7$  or N;

Y' is J-J'-J'' where J is  $(\text{CR}^7\text{R}^{7'})_n$  and  $n = 0-3$ , J' is a bond or O, S, S=O,  $\text{SO}_2$ , NH,  
 $\text{NR}^7$ ,  $\text{CR}^7\text{R}^{7'}$ ,  $\text{R}^2\text{P}=\text{O}$ ,  $\text{R}^2\text{P}=\text{S}$ ,  $\text{R}^2\text{OP}=\text{O}$ ,  $\text{R}^2\text{NHP}=\text{O}$ ,  $\text{OP}=\text{OOR}^2$ ,  $\text{OP}=\text{ONHR}^2$ ,  
 $\text{OSO}_2$ ,  $\text{NHNH}$ ,  $\text{NHNH}^6$ ,  $\text{NR}^6\text{NH}$ ,  $\text{N}=\text{N}$ , cycloalkyl or substituted cycloalkyl,  
cycloalkenyl or substituted cycloalkenyl, or heterocyclo or substituted  
30 heterocyclo, and J'' is  $(\text{CR}^7\text{R}^{7'})_n$  and  $n = 0-3$ , where Y' is not a bond;



- W' is  $\text{CR}^7\text{R}^{7'}$ — $\text{CR}^7\text{R}^{7'}$ ,  $\text{CR}^7\text{R}^{7'}$ — $\text{C}=\text{O}$ ,  $\text{NR}^9$ — $\text{CR}^7\text{R}^{7'}$ ,  $\text{N}=\text{CR}^8$ ,  $\text{N}=\text{N}$ ,  $\text{NR}^9$ — $\text{NR}^{9'}$ ,  
cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,  
heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein,  
when W' is not  $\text{NR}^9$ — $\text{CR}^7\text{R}^{7'}$ ,  $\text{N}=\text{CR}^8$ ,  $\text{N}=\text{N}$ ,  $\text{NR}^9$ — $\text{NR}^{9'}$ , or heterocyclo or  
5 substituted heterocyclo, then J' must be O, S,  $\text{S}=\text{O}$ ,  $\text{SO}_2$ , NH,  $\text{NR}^7$ ,  $\text{OP}=\text{OOR}^2$ ,  
 $\text{OP}=\text{ONHR}^2$ ,  $\text{OSO}_2$ ,  $\text{NHNH}$ ,  $\text{NHNR}^6$ ,  $\text{NR}^6\text{NH}$ , or  $\text{N}=\text{N}$ ;
- $\text{Q}_1$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or  
substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,  
heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted  
10 arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo  
or substituted heterocyclo, halo, CN,  $\text{R}^1\text{OC}=\text{O}$ ,  $\text{R}^4\text{C}=\text{O}$ ,  $\text{R}^5\text{R}^6\text{NC}=\text{O}$ ,  
 $\text{HO CR}^7\text{R}^{7'}$ , nitro,  $\text{R}^1\text{OCH}_2$ ,  $\text{R}^1\text{O}$ ,  $\text{NH}_2$ , or  $\text{NR}^4\text{R}^5$ ;
- $\text{Q}_2$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or  
substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,  
15 heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted  
arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo  
or substituted heterocyclo, halo, CN,  $\text{R}^1\text{OC}=\text{O}$ ,  $\text{R}^4\text{C}=\text{O}$ ,  $\text{R}^5\text{R}^6\text{NC}=\text{O}$ ,  
 $\text{HO CR}^7\text{R}^{7'}$ , nitro,  $\text{R}^1\text{OCH}_2$ ,  $\text{R}^1\text{O}$ ,  $\text{NH}_2$ , or  $\text{NR}^4\text{R}^5$ ;
- L is a bond,  $(\text{CR}^7\text{R}^{7'})_n$ , NH,  $\text{NR}^5$  or  $\text{NR}^5(\text{CR}^7\text{R}^{7'})_n$ , where  $n = 0-3$ ;
- 20  $\text{R}^1$  and  $\text{R}^{1'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or  
substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo  
or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl,  
cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or  
substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted  
25 arylalkyl;
- $\text{R}^2$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or  
substituted cycloalkenyl, heterocyclo or substituted heterocyclo,  
cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted  
cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or  
30 substituted aryl, arylalkyl or substituted arylalkyl;



- $R^3$  and  $R^{3'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, hydroxylamine, hydroxamide, alkoxy or substituted alkoxy, amino,  $NR^1R^2$ , thiol, alkylthio or substituted alkylthio;
- $R^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ , or  $SO_2NR^1R^{1'}$ ;
- $R^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^7$  and  $R^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN,  $OR^1$ , nitro,



hydroxylamine, hydroxylamide, amino,  $\text{NHR}^4$ ,  $\text{NR}^2\text{R}^5$ ,  $\text{NOR}^1$ , thiol, alkylthio or substituted alkylthio,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{OC}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ ,  $\text{SOR}^1$ ,  $\text{PO}_3\text{R}^1\text{R}^{1'}$ ,  $\text{R}^1\text{R}^{1'}\text{NC}=\text{O}$ ,  $\text{C}=\text{OSR}^1$ ,  $\text{SO}_2\text{R}^1$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ ;

$\text{R}^8$  and  $\text{R}^{8'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted

5 alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, nitro, halo, CN,  $\text{OR}^1$ , amino,  $\text{NHR}^4$ ,  $\text{NR}^2\text{R}^5$ ,  
 10  $\text{NOR}^1$ , alkylthio or substituted alkylthio,  $\text{C}=\text{OSR}^1$ ,  $\text{R}^1\text{OC}=\text{O}$ ,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ ,  $\text{R}^1\text{R}^{1'}\text{NC}=\text{O}$ ,  $\text{S}=\text{OR}^1$ ,  $\text{SO}_2\text{R}^1$ ,  $\text{PO}_3\text{R}^1\text{R}^{1'}$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ ;

$\text{R}^9$  and  $\text{R}^{9'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl,  
 15 cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $\text{OR}^1$ ,  $\text{R}^1\text{C}=\text{O}$ ,  $\text{R}^1\text{OC}=\text{O}$ ,  $\text{R}^1\text{NHC}=\text{O}$ , or  $\text{SO}_2\text{NR}^1\text{R}^{1'}$ ;

with the provisos (1) to (17) of said formula Ia, and further where (i) when  $\text{Y}'$  is  $-\text{O}-$  and  $\text{W}'$  is  $\text{CR}^7\text{R}^{7'}-\text{CR}^7\text{R}^{7'}$ ,  $\text{A}_1$  and  $\text{A}_2$  are not simultaneously CH; and (ii)  
 20 when L is a bond, G is not an unsubstituted phenyl group.

### 3. The compound of Claim 1, wherein

G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and

25 which is optionally substituted at one or more positions;

$\text{Z}_1$  is O;

$\text{Z}_2$  is O;

$\text{A}_1$  is  $\text{CR}^7$ ;

$\text{A}_2$  is  $\text{CR}^7$ ;



- Y' is J-J'-J'' where J is  $(CR^7R^{7'})_n$  and  $n = 0-3$ , J' is a bond or O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>, CR<sup>7</sup>R<sup>7'</sup>, R<sup>2</sup>P=O, R<sup>2</sup>P=S, R<sup>2</sup>OP=O, R<sup>2</sup>NHP=O, OP=OOR<sup>2</sup>, OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHHN, NHR<sup>6</sup>, NR<sup>6</sup>NH, N=N, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, or heterocyclo or substituted heterocyclo, and J'' is  $(CR^7R^{7'})_n$  and  $n = 0-3$ , where Y' is not a bond;
- W' is CR<sup>7</sup>R<sup>7'</sup>—CR<sup>7</sup>R<sup>7'</sup>, CR<sup>7</sup>R<sup>7'</sup>—C=O, NR<sup>9</sup>—CR<sup>7</sup>R<sup>7'</sup>, N=CR<sup>8</sup>, N=N, NR<sup>9</sup>—NR<sup>9'</sup>, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein, when W' is not NR<sup>9</sup>—CR<sup>7</sup>R<sup>7'</sup>, N=CR<sup>8</sup>, N=N, NR<sup>9</sup>—NR<sup>9'</sup>, or heterocyclo or substituted heterocyclo, then J' must be O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>, OP=OOR<sup>2</sup>, OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHHN, NHR<sup>6</sup>, NR<sup>6</sup>NH, or N=N;
- Q<sub>1</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O, HO-CR<sup>7</sup>R<sup>7'</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, or NR<sup>4</sup>R<sup>5</sup>;
- Q<sub>2</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O, HO-CR<sup>7</sup>R<sup>7'</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, or NR<sup>4</sup>R<sup>5</sup>;
- L is a bond;
- R<sup>1</sup> and R<sup>1'</sup> are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;



- $R^2$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- $R^3$  and  $R^{3'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, alkoxy or substituted alkoxy, amino,  $NR^1R^2$ , alkylthio or substituted alkylthio;
- $R^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ , or  $SO_2NR^1R^{1'}$ ;
- $R^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ , or  $SO_2NR^1R^{1'}$ ;



- $R^7$  and  $R^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN,  $OR^1$ , nitro, amino,  $NHR^4$ ,  $NR^2R^5$ , alkylthio or substituted alkylthio,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $R^1R^{1'}NC=O$ , or  $SO_2NR^1R^{1'}$ ;
- $R^8$  and  $R^{8'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, nitro, halo, CN,  $OR^1$ , amino,  $NHR^4$ ,  $NR^2R^5$ , alkylthio or substituted alkylthio,  $R^1C=O$ ,  $R^1NHC=O$ ,  $R^1R^{1'}NC=O$ ,  $SO_2R^1$ , or  $SO_2NR^1R^{1'}$ ; and
- $R^9$  and  $R^{9'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1NHC=O$ , or  $SO_2NR^1R^{1'}$ ;
- with the provisos (1) to (17) of said formula Ia, and further where (i) when  $Y'$  is -O- and  $W'$  is  $CR^7R^{7'}-CR^7R^{7'}$ ,  $A_1$  and  $A_2$  are not simultaneously CH; and (ii) when L is a bond, G is not an unsubstituted phenyl group.

4. A compound selected from the group consisting of:

$(3\alpha,4\alpha,7\alpha,7a\alpha)$ -2-(4-Bromo-3-methylphenyl)tetrahydro-4,7-ethanothiopyrano[3,4-c]pyrrole-1,3,8(2H,4H)-trione (1C);



- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Bromo-3-methylphenyl)tetrahydro-4,7-ethanothiopyrano[3,4-c]pyrrole-1,3,8(2H,4H)-trione 5,5-dioxide (2);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Chlorophenyl)hexahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione (3);
- 5 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[(Acetyloxy)methyl]-3a,4,7,7a-tetrahydro-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione (4i & 4ii, respectively);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[(Acetyloxy)methyl]-Hexahydro-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione (5i & 5ii,
- 10 respectively);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-3a,4,7,7a-Tetrahydro-5-(hydroxymethyl)-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione (6i & 6ii, respectively);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-3a,4,7,7a-Tetrahydro-5-(hydroxymethyl)-4-methyl-2-[3-
- 15 (trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione (7);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[3,5-Bis(trifluoromethyl)phenyl]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione (8);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Bromophenyl)octahydro-1,3-dioxo-4,7-etheno-5H-pyrrolo[3,4-c]pyridine-5-carboxylic acid phenyl ester (9);
- 20 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Bromophenyl)octahydro-1,3-dioxo-4,7-etheno-5H-pyrrolo[3,4-c]pyridine-5-carboxylic acid phenylmethyl ester (10);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-1H-pyrrolo[3,4-c]pyridine-1,3(2H)-dione trifluoroacetate (11);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-5-Acetylhexahydro-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-
- 25 1H-pyrrolo[3,4-c]pyridine-1,3(2H)-dione (12);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-5-Benzoylhexahydro-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-1H-pyrrolo[3,4-c]pyridine-1,3(2H)-dione (13);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-5-methyl-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-1H-pyrrolo[3,4-c]pyridine-1,3(2H)-dione (14);



- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-5-(phenylmethyl)-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-1H-pyrrolo[3,4-c]pyridine-1,3(2H)-dione trifluoroacetate (15);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-5-propyl-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-1H-pyrrolo[3,4-c]pyridine-1,3(2H)-dione trifluoroacetate (16);
- 5 (3 $\alpha$ ,4 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ ,6 $\alpha$ )-2-[4-Cyano-3-(trifluoromethyl)phenyl]decahydro-1,3-dioxo-4,6-(iminomethano)cycloprop[*f*]isoindole-7-carboxylic acid phenylmethyl ester (17);
- (3 $\alpha$ ,4 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ ,6 $\alpha$ )-4-[Decahydro-1,3-dioxo-4,6-(iminomethano)cycloprop[*f*]isoindol-2-yl]-2-(trifluoromethyl)benzonitrile (18);
- 10 (3 $\alpha$ ,4 $\alpha$ ,4 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ ,6 $\alpha$ )-4-[Decahydro-7-methyl-1,3-dioxo-4,6-(iminomethano)cycloprop[*f*]isoindol-2-yl]-2-(trifluoromethyl)benzonitrile (19);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile (20B);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[4-[[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl]thio]phenyl]acetamide
- 15 (21E);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[4-[[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl]sulfinyl]phenyl]acetamide (22);
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[4-[[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl]sulfonyl]phenyl]acetamide (23);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-N-[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl]benzenesulfonamide (24Ci & 24Cii, respectively);
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-(2-hydroxyethyl)-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile (25B);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[4-[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethoxy]phenyl]acetamide (26Ci & 26Cii, respectively);
- 30



- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-2-(2-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione (27D);
- (1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,6 $\alpha$ )-Hexahydro-4-(2-naphthalenyl)-2,6-epoxy-3H-oxireno[f]isoindole-3,5(4H)-dione (28B);
- 5 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-[4-Bromo-3-(trifluoromethyl)phenyl]-3a,4,7,7a-tetrahydro-4,7-dimethyl-4,7-epithio-1H-isoindole-1,3(2H)-dione 8-oxide (29);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-[4-Bromo-3-(trifluoromethyl)phenyl]-3a,4,7,7a-tetrahydro-4,7-epithio-1H-isoindole-1,3(2H)-dione 8-oxide (30);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-2-[3-(trifluoromethyl)phenyl]-4,7-imino-1H-isoindole-1,3(2H)-dione (31D);
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-3a,4,7,7a-Tetrahydro-4,7-dimethyl-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione (32i & 32ii, respectively);
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione (33);
- 15 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Tetrahydro-5-methyl-2-(4-nitro-1-naphthalenyl)-4,7-etheno-1H-pyrrolo[3,4-c]pyridine-1,3,6(2H,5H)-trione (34B);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Fluorophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile (35);
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-(2-Bromoethyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile (36);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(3-methyl-4-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione (37);
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2-Fluorenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[3-Chloro-4-(4-morpholinyl)phenyl]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-1H-inden-5-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Bromo-1-naphthalenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Chloro-1-naphthalenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Amino-1-naphthalenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(7-hydroxy-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(1H-indol-5-yl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(1H-indazol-6-yl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(1,3-Benzodioxol-5-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Amino-3-(trifluoromethyl)phenyl]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Chloro-4-iodophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(8-quinoliny)l)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-1,4-benzodioxin-6-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[2-oxo-4-(trifluoromethyl)-2H-1-benzopyran-7-yl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(4-methyl-2-oxo-2H-1-benzopyran-7-yl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,5-Dimethoxy-4-nitrophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 30



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2,3,5,6-Tetrafluoro-4-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2,4,5-trifluorophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2,4,5-trichlorophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2-Amino-4,5-dichlorophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,4-Difluorophenyl)hexahydro-4,7-epoxy-1H-isoindole-
- 10 1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-1-Acetyl-2,3-dihydro-6-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-1H-indole;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Chloro-4-fluorophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,4-Dichlorophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(3,4,5-trichlorophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Chloro-4-methoxyphenyl)hexahydro-4,7-epoxy-1H-
- 20 isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Chloro-4-methylphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-methyl-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Chloro-3-methylphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,4-Dimethylphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Bromo-3-(trifluoromethyl)phenyl]hexahydro-4,7-epoxy-
- 30 1H-isoindole-1,3(2H)-dione;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Bromo-3-methylphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Fluoro-3-nitrophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Fluoro-3-(trifluoromethyl)phenyl]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Chloro-3-nitrophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Chloro-3-(trifluoromethyl)phenyl]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Chloro-2-methoxy-5-methylphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Amino-3-nitrophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(4-methyl-3-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,4-Dimethoxyphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(3-hydroxy-4-methoxyphenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(4-methyl-5-nitro-2-pyridinyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Chloro-4-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)- $\alpha$ -phenylbenzeneacetonitrile;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-methoxy-3-dibenzofuranyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2,3,4-trifluorophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-2-methyl-1,3-dioxo-1H-isoindol-5-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Bromo-2,3,5,6-tetrafluorophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-hydroxy-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[2,5-Dichloro-4-(1H-pyrrol-1-yl)phenyl]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[4-(methoxymethyl)-2-oxo-2H-1-benzopyran-7-yl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(6-Benzothiazolyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Methoxy-4-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzoic acid methyl ester;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Methyl-5-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-oxo-2H-1-benzopyran-6-yl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2,3,5,6-tetramethyl-4-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2,4,5-trimethylphenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Fluoro-3-methylphenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(3-methoxy-4-methylphenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-Ethyl-2-methyl-5-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-N-phenylbenzenesulfonamide;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2,6-Dibromo-4-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-
- 30 2-yl)benzenesulfonamide;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2,4-Dimethyl-6-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-3-pyridinecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dimethyl-1H-indol-5-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Dibenzofuranyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2'-hydroxy[1,1':3',1''-terphenyl]-5'-yl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(5,6,7,8-tetrahydro-3-hydroxy-2-naphthalenyl)-
- 10 4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-1H-indol-6-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(1,3-Dihydro-2,2-dioxidobenzo[c]thiophen-5-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-hydroxy-4,5-dimethylphenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-2,2,3,3-tetrafluoro-1,4-benzodioxin-6-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(1H-indazol-5-yl)-4,7-epoxy-1H-isoindole-
- 20 1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Amino-2,3,5,6-tetrafluorophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Bromo-3-chlorophenyl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(5-hydroxy-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Morpholinyl)-5-(octahydro-1,3-dioxo-4,7-epoxy-2H-
- 30 isoindol-2-yl)benzoic acid methyl ester;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Fluoro-5-(octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(9-Ethyl-9H-carbazol-3-yl)hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[1,2-Dihydro-8-methyl-2-oxo-4-(trifluoromethyl)-7-quinolinyll]hexahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Bromo-3-methylphenyl)-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-3a,4,7,7a-Tetrahydro-2-(2-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(9-Ethyl-9H-carbazol-3-yl)-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Fluoro-3-(trifluoromethyl)phenyl]-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[1,2-Dihydro-8-methyl-2-oxo-4-(trifluoromethyl)-7-quinolinyll]-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-[(Acetyloxy)methyl]-2-(4-bromo-3-methylphenyl)-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[(Acetyloxy)methyl]-2-(4-bromo-3-methylphenyl)-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione.;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-1-naphthalenecarbonitrile;
- 30



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-(Benzo[b]thiophen-3-yl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-[4-nitro-3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(1,3,3a,4,7,7a-Hexahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-(2-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Bromo-3-methylphenyl)hexahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichlorophenyl)hexahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3-Chloro-4-fluorophenyl)hexahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Methoxy-4-(octahydro-1,3-dioxo-4-methyl-4,7-epoxy-2H-isoindol-2-yl)-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-[4-nitro-3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[4-(1H-imidazol-1-yl)phenyl]-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[3-Chloro-4-(2-thiazolyl)phenyl]hexahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(3,5-Dichlorophenyl)hexahydro-4,7-imino-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Bromo-1-naphthalenyl)hexahydro-4,7-imino-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Bromo-3-methylphenyl)hexahydro-4,7-imino-1H-isoindole-1,3(2H)-dione;
- 30



- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-2-(4-nitro-1-naphthalenyl)-4,7-imino-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-8-Acetyl-2-(3,5-dichlorophenyl)hexahydro-4,7-imino-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Octahydro-1,3-dioxo-2-[3-(trifluoromethyl)phenyl]-4,7-ethano-5H-pyrrolo[3,4-c]pyridine-5-carboxylic acid phenyl ester;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-(Octahydro-1,3-dioxo-4,7-ethano-2H-pyrrolo[3,4-c]pyridin-2-yl)-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-(Octahydro-5-methyl-1,3-dioxo-4,7-ethano-2H-pyrrolo[3,4-c]pyridin-2-yl)-1-naphthalenecarbonitrile;
- 10 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-1,3-dioxo-4,7-etheno-5H-pyrrolo[3,4-c]pyridine-5-carboxylic acid phenylmethyl ester;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-(Octahydro-1,3-dioxo-4,7-ethano-2H-pyrrolo[3,4-c]pyridin-2-yl)-2-(trifluoromethyl)benzonitrile;
- 15 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-(Octahydro-5-methyl-1,3-dioxo-4,7-ethano-2H-pyrrolo[3,4-c]pyridin-2-yl)-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-1,3-dioxo-4,7-etheno-5H-pyrrolo[3,4-c]pyridine-5-carboxylic acid phenylmethyl ester;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-[4-Bromo-3-(trifluoromethyl)phenyl]tetrahydro-5-methyl-4,7-etheno-1H-pyrrolo[3,4-c]pyridine-1,3,6(2H,5H)-trione;
- 20 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Tetrahydro-5-methyl-2-[3-(trifluoromethyl)phenyl]-4,7-etheno-1H-pyrrolo[3,4-c]pyridine-1,3,6(2H,5H)-trione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Tetrahydro-5-methyl-2-(2-naphthalenyl)-4,7-etheno-1H-pyrrolo[3,4-c]pyridine-1,3,6(2H,5H)-trione;
- 25 (1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,6 $\alpha$ )-Hexahydro-4-[3-(trifluoromethyl)phenyl]-2,6-epoxy-3H-oxireno[f]isoindole-3,5(4H)-dione;
- (1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,6 $\alpha$ )-4-(3,5-Dichlorophenyl)hexahydro-2,6-epoxy-3H-oxireno[f]isoindole-3,5(4H)-dione;
- (1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,6 $\alpha$ )-Hexahydro-4-(4-nitro-1-naphthalenyl)-2,6-epoxy-3H-oxireno[f]isoindole-3,5(4H)-dione;
- 30



- (1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,6 $\alpha$ )-4-(3,4-Dichlorophenyl)hexahydro-2,6-epoxy-3H-oxireno[f]isoindole-3,5(4H)-dione;  
2-[4-(4-Bromophenoxy)phenyl]-3a,4,7,7a-tetrahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 3a,4,7,7a-Tetrahydro-2-(2-methoxyphenyl)-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-;  
[(1,2,3,3a,7,7a-Hexahydro-2-phenyl-4,7-epoxy-4H-isoindol-4-yl)methyl]carbamic acid (3,5-dimethoxyphenyl)methyl ester;  
2-(2,4-Dimethylphenyl)-3a,4,7,7a-tetrahydro-4-(hydroxymethyl)-4,7-epoxy-1H-
- 10 isoindole-1,3(2H)-dione;  
2-(1,3-Benzodioxol-5-yl)-3a,4,7,7a-tetrahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
4-[Bis(acetyloxy)methyl]-2-(3-bromophenyl)-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 N-[[1,2,3,3a,7,7a-Hexahydro-2-(2,4,6-trimethylphenyl)-4,7-epoxy-4H-isoindol-4-yl)methyl]-2,2-dimethylpropanamide;  
3a,4,7,7a-Tetrahydro-4-(hydroxymethyl)-2-[2-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
3a,4,7,7a-Tetrahydro-4-(hydroxymethyl)-2-(1-naphthalenyl)-4,7-epoxy-1H-
- 20 isoindole-1,3(2H)-dione;  
2-Chloro-5-(1,3,3a,4,7,7a-hexahydro-4,7-dimethyl-4,7-epoxy-2H-isoindol-2-yl)benzoic acid methyl ester;  
4-[Bis(acetyloxy)methyl]-2-(4-bromo-2-nitrophenyl)-3a,4,7,7a-tetrahydro-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 3a,4,7,7a-Tetrahydro-4-methyl-2-(4-methyl-3-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
2-[2-Chloro-5-(trifluoromethyl)phenyl]-3a,4,7,7a-tetrahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
2-[4-Chloro-3-(trifluoromethyl)phenyl]-3a,4,7,7a-tetrahydro-4,7-dimethyl-4,7-
- 30 epoxy-1H-isoindole-1,3(2H)-dione;  
2-(1,3,3a,4,7,7a-Hexahydro-4-methyl-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;



- 2-(4-Fluorophenyl)-3a,4,7,7a-tetrahydro-4-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
2,2,2-Trifluoro-N-[(1,2,3,3a,7,7a-hexahydro-2-phenyl-4,7-epoxy-4H-isoindol-4-yl)methyl]acetamide;
- 5 3a,4,7,7a-Tetrahydro-4,7-dimethyl-2-(4-methyl-3-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
2-Chloro-5-[1,3,3a,4,7,7a-hexahydro-4-(hydroxymethyl)-4,7-epoxy-2H-isoindol-2-yl]benzoic acid;  
3a,4,7,7a-Tetrahydro-4,7-dimethyl-2-(4-nitrophenyl)-4,7-epoxy-1H-isoindole-
- 10 1,3(2H)-dione;  
3a,4,7,7a-Tetrahydro-2-(2-mercaptophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
3a,4,7,7a-Tetrahydro-2-[2-[(phenylmethyl)thio]phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 [[2-(4-Chlorophenyl)-1,2,3,3a,7,7a-hexahydro-4,7-epoxy-4H-isoindol-4-yl]methyl]carbamic acid 2-methylpropyl ester;  
4-(1,1-Dimethylethyl)-N-[[1,2,3,3a,7,7a-hexahydro-2-(4-methylphenyl)-4,7-epoxy-4H-isoindol-4-yl]methyl]benzamide;  
2,4-Dichloro-N-[[1,2,3,3a,7,7a-hexahydro-2-(4-nitrophenyl)-4,7-epoxy-4H-
- 20 isoindol-4-yl]methyl]benzamide;  
N-[[2-(4-Chlorophenyl)-1,2,3,3a,7,7a-hexahydro-4,7-epoxy-4H-isoindol-4-yl]methyl]-2,4,6-trimethylbenzenesulfonamide;  
[(1,2,3,3a,7,7a-Hexahydro-2-phenyl-4,7-epoxy-4H-isoindol-4-yl)methyl]carbamic acid 1,1-dimethylethyl ester;
- 25 N-[(1,2,3,3a,7,7a-Hexahydro-2-phenyl-4,7-epoxy-4H-isoindol-4-yl)methyl]-2-phenoxyacetamide;  
N-[[1,2,3,3a,7,7a-Hexahydro-2-(4-nitrophenyl)-4,7-epoxy-4H-isoindol-4-yl]methyl]-2,2-dimethylpropanamide;  
2-(2,4-Dichlorophenoxy)-N-[[1,2,3,3a,7,7a-hexahydro-2-(4-nitrophenyl)-4,7-
- 30 epoxy-4H-isoindol-4-yl]methyl]acetamide;



N-[[1,2,3,3a,7,7a-Hexahydro-2-(4-methylphenyl)-4,7-epoxy-4H-isoindol-4-yl)methyl]-3,5-dimethoxybenzamide;

N-[[2-(4-Chlorophenyl)-1,2,3,3a,7,7a-hexahydro-4,7-epoxy-4H-isoindol-4-yl)methyl]-2-nitrobenzenesulfonamide;

5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[(1S)-1-phenylethyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[(1S)-2-hydroxy-1-phenylethyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[(1S)-2-(Acetyloxy)-1-phenylethyl]-3a,4,7,7a-tetrahydro-10 4,7-epoxy-1H-isoindole-1,3(2H)-dione;

(3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-3a,4,7,7a-Tetrahydro-2-[(1S)-1-phenylethyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[(1R)-1-phenylethyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;

15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[[[(Octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)methyl]amino]benzoic acid;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(4-morpholinylmethyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-(2-hydroxyethyl)-7-methyl-1,3-dioxo-4,7-epoxy-20 2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )- and (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-(phenylmethyl)-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-(4-[7-[2-(4-Bromophenoxy)ethyl]octahydro-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;

25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-7-[2-(4-iodophenoxy)ethyl]-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-7-[2-(4-methoxyphenoxy)ethyl]-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[7-[2-(4-Ethoxyphenoxy)ethyl]octahydro-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[7-[2-(4-Chlorophenoxy)ethyl]octahydro-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethoxy]benzoic acid, methyl ester;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-(2-hydroxyethyl)-7-methyl-2-(3-methyl-4-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethoxy)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichlorophenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-propanenitrile;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[2-(4-morpholinyl)ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile, trifluoroacetate;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Fluoro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Fluoro-4-nitro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(1,1-Dioxidobenzo[b]thiophen-3-yl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 4-(1,3,3a,4,7,7a-Hexahydro-4,6,7-trimethyl-1,3-dioxo-4,7-epoxy-2H-pyrrolo[3,4-c]pyridin-2-yl)-2-(trifluoromethyl)benzonitrile;
- 30



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Tetrahydro-4,7-dimethyl-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3,5(2H,4H)-trione;  
(3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Tetrahydro-4,7-dimethyl-2-[3-(trifluoromethyl)phenyl]-4,7-epoxy-1H-isoindole-1,3,5(2H,4H)-trione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Chloro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Chloro-4-nitro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-Ethylhexahydro-7-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)-N-(4-fluorophenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-acetamide;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-(2-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione, faster eluting enantiomer;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-(2-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione, slower eluting enantiomer;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-[[4-Fluorophenyl)methyl]methylamino]ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 20 (3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,6 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-4,5,6,7-tetramethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile, faster eluting antipode;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile, slower eluting enantiomer;  
(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-5-hydroxy-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;



- (3 $\alpha$ ,4 $\beta$ ,5 $\alpha$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-5-hydroxy-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;  
( $\alpha$ R)- $\alpha$ -Methoxybenzeneacetic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl  
5 ester;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(Methylthio)-4-(octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(Methylsulfinyl)-4-(octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;  
10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(Methylsulfonyl)-4-(octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-7-[2-[(1,1-Dimethylethyl)dimethylsilyl]oxy]ethyl]hexahydro-5-hydroxy-4-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
15 (3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-5-hydroxy-7-(2-hydroxyethyl)-4-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-7-[2-(4-Fluorophenoxy)ethyl]hexahydro-5-hydroxy-4-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,6 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-5,6-dihydroxy-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;  
20 (3 $\alpha$ ,4 $\beta$ ,5 $\alpha$ ,6 $\alpha$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-5,6-dihydroxy-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,6 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-5,6-dihydroxy-4-(hydroxyethyl)-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
25 (3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,6 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-5,6-dihydroxy-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,5 $\alpha$ ,8 $\alpha$ ,8 $\beta$ )-4-(Decahydro-5-hydroxy-4-methyl-1,3-dioxo-4,8a-epoxy-2H-furo[3,2-e]isoindol-2-yl)-1-naphthalenecarbonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-acetic acid;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-acetic acid, methyl ester;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)-N-[(4-fluorophenyl)methyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-acetamide;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[2-[2-(4-Cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl]-4-fluorobenzamide;
- 10 [3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-4-(2-hydroxyethyl)-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
[3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-4-(2-hydroxyethyl)-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
[3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-[2-(3-Fluorophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 15 [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-[2-(3-Fluorophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(4-Fluorophenyl)carbamic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethyl ester;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-(2-hydroxyethyl)-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,6 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Cyanophenoxy)ethyl]octahydro-6-hydroxy-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 25 [3aS-(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-5-hydroxy-7-(2-hydroxyethyl)-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
[3aR-(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-5-hydroxy-7-(2-hydroxyethyl)-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Cyanophenoxy)ethyl]-7-ethyloctahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 30



(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-(Acetyloxy)ethyl]-2-(4-cyano-1-naphthalenyl)hexahydro-7-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-(2-oxoethyl)-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

5 [3 $\alpha$ ,4 $\beta$ (E),7 $\beta$ ,7 $\alpha$ ]-4-[4-[3-(4-Cyanophenyl)-2-propenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

[3 $\alpha$ ,4 $\beta$ (Z),7 $\beta$ ,7 $\alpha$ ]-4-[4-[3-(4-Cyanophenyl)-2-propenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[3-(4-Cyanophenyl)propyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-[(6-Chloro-1,2-benzisoxazol-3-yl)oxy]ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[2-[(6-nitro-1H-indazol-3-yl)oxy]ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

15 [3aS-(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-(1,2-Benzisoxazol-3-yloxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

[3aR-(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-(1,2-Benzisoxazol-3-yloxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-

20 naphthalenecarbonitrile;

(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-(Octahydro-5-hydroxy-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;

(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-(Octahydro-5-hydroxy-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethyl)benzonitrile;

25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-1,3-dioxo-7-[2-(phenylmethoxy)ethyl]-4,7-epoxy-4H-isoindole-4-propanenitrile;

(3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-1,3-dioxo-7-[2-(phenylmethoxy)ethyl]-4,7-epoxy-4H-isoindole-4-propanenitrile;

(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-7-(2-hydroxyethyl)-1,3-dioxo-4,7-epoxy-4H-isoindole-4-propanenitrile;

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- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-7-(2-hydroxyethyl)-  
1,3-dioxo-4,7-epoxy-4H-isoindole-4-propanenitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)-7-[2-(4-  
fluorophenoxy)ethyl]octahydro-1,3-dioxo-4,7-epoxy-4H-isoindole-4-  
5 propanenitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(7-Chloro-2,1,3-benzoxadiazol-4-yl)hexahydro-4,7-  
dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(7-Chloro-2-methyl-4-benzofuranyl)hexahydro-4,7-  
dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(7-Chloro-2-methylbenzo[b]thiophen-4-yl)hexahydro-4,7-  
dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
[3 $\alpha$ ,4 $\beta$ (E),7 $\beta$ ,7 $\alpha$ ]-4-[2-(4-Cyano-1-naphthalenyl)octahydro-7-methyl-1,3-  
dioxo-4,7-epoxy-4H-isoindol-4-yl]-2-butenic acid, phenylmethyl ester;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-  
15 4,7-epoxy-4H-isoindole-4-butanic acid;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)-N-(4-fluorophenyl)octahydro-7-  
methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-butanamide;  
[3aS-(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-(Acetyloxy)ethyl]octahydro-5-hydroxy-4-  
methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
20 [3aR-(3 $\alpha$ ,4 $\beta$ ,5 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-5-hydroxy-7-(2-hydroxyethyl)-4-  
methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ (E))-4-[Octahydro-4-methyl-1,3-dioxo-7-(4-oxo-4-phenyl-2-  
butenyl)-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ (E))-4-[Octahydro-4-methyl-1,3-dioxo-7-(4-oxo-4-phenyl-2-  
25 butenyl)-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-(4-[7-[2-(4-Bromophenoxy)ethyl]octahydro-4-methyl-1,3-  
dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-7-[2-(4-iodophenoxy)ethyl]-4-methyl-1,3-dioxo-  
4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-7-[2-(4-methoxyphenoxy)ethyl]-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[7-[2-(4-Ethoxyphenoxy)ethyl]octahydro-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[7-[2-(4-Chlorophenoxy)ethyl]octahydro-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethoxy]benzoic acid, methyl ester;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-(2-hydroxyethyl)-7-methyl-2-(3-methyl-4-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethoxy)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichlorophenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(phenylmethoxy)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-(2-hydroxyethyl)-7-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-(4-Fluorophenoxy)ethyl]hexahydro-7-methyl-2-(3-methyl-4-nitrophenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-  
[(trifluoromethyl)thio]phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-  
(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[2-(4-nitrophenoxy)ethyl]-1,3-dioxo-  
5 4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-(4-Fluorophenoxy)ethyl]hexahydro-7-methyl-2-(4-nitro-  
1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-7-methyl-1,3-dioxo-7-[2-[2-  
(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-  
10 (trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(2-Bromophenoxy)ethyl]octahydro-7-methyl-1,3-  
dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(3-Fluorophenoxy)ethyl]octahydro-7-methyl-1,3-  
dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[4-(1H-imidazol-1-yl)phenyl]-4-methyl-4,7-  
epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[3-Chloro-4-(2-thiazolyl)phenyl]hexahydro-4-methyl-4,7-  
epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(3-methyl-4-nitrophenyl)-4,7-  
20 epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(2-methyl-4-nitrophenyl)-4,7-  
epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichlorophenyl)hexahydro-4-(2-hydroxyethyl)-7-  
methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichlorophenyl)-4-[2-(4-  
fluorophenoxy)ethyl]hexahydro-7-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-  
dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-[2-(4-hydroxyphenoxy)ethyl]-7-methyl-1,3-  
dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Cyanophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[3-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(3-Bromophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[(4-Fluorophenyl)methyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(1,6-Dihydro-1-methyl-6-oxo-3-pyridinyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(1-methyl-6-oxo-3-piperidinyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(3-Cyanophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethoxy]benzoic acid, phenylmethyl ester;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-(2-phenoxyethyl)-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichloro-4-nitrophenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(3,5-Dichloro-4-hydroxyphenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Fluoro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[3-methoxy-4-(5-oxazolyl)phenyl]-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-[2-(4-methoxyphenoxy)ethyl]-7-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-(4-nitro-1-naphthalenyl)-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-2-(4-nitro-1-naphthalenyl)-7-[2-(4-nitrophenoxy)ethyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(1,6-Dihydro-1,4-dimethyl-6-oxo-3-pyridinyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-7-methyl-2-(4-nitro-1-naphthalenyl)-1,3-dioxo-10 4,7-epoxy-4H-isoindol-4-yl]ethoxy]benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-1,2-benzenedicarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(2-Bromoethyl)hexahydro-7-methyl-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Cyanophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-[2-(4-methoxyphenoxy)ethyl]-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-[2-(3-methoxyphenoxy)ethyl]-7-methyl-1,3-20 dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(3-Fluorophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[2-[3-(4-morpholinyl)phenoxy]ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[2-[4-nitro-3-(trifluoromethyl)phenoxy]ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(3-Cyanophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-3-methyl-2-oxo-6-benzothiazolyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(2,3-Dihydro-2-oxo-6-benzothiazolyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-[3-(Dimethylamino)phenoxy]ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethoxy]-1,2-benzenedicarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[2-Cyano-5-(octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)phenyl]acetamide;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-2-(trifluoromethoxy)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Methoxy-4-(octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-(4,5-Dichloro-1H-imidazol-1-yl)phenyl]hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-(4-Bromo-1-methyl-1H-pyrazol-3-yl)phenyl]hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-(2-hydroxyethyl)-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-Iodo-4-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)benzonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Fluorophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(4-Cyano-3-fluorophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-[2,3,5,6-tetrafluoro-4-(trifluoromethyl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-[4-(1H-1,2,4-triazol-3-yl)phenyl]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 5 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-(4,5-Dihydro-5-oxo-1,2,4-oxadiazol-3-yl)phenyl]hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-[3-methoxy-4-(2-oxazolyl)phenyl]-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(4-hydroxy-1-naphthalenyl)-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(8-hydroxy-5-quinoliny)-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione, trifluoroacetate;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-1,3-dioxo-7-[2-
- 15 [methyl(phenylmethyl)amino]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(5-quinoliny)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-5-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-
- 20 2-yl)-2-pyridinecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-5-(Octahydro-4,7-dimethyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl)-8-quinolinecarbonitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Bromo-4-nitro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(5-Bromo-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-[8-(trifluoromethyl)-4-quinoliny]-4,7-epoxy-1H-isoindole-1,3(2H)-dione;



- 4-Fluorobenzoic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- 5 Benzeneacetic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- 4-Fluorobenzeneacetic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4-methyl-7-[2-[4-(methylsulfonyl)phenoxy]ethyl]-2-(4-nitro-1-naphthalenyl)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(2-naphthalenyl)-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Chloro-1-naphthalenyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-N-[(4-Chlorophenyl)methyl]-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-acetamide;
- 4,7,7-Trimethyl-3-oxo-2-oxabicyclo[2.2.1]heptane-1-carboxylic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- 20 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- ( $\alpha$ S)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)benzeneacetic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- 25 ( $\alpha$ R)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)benzeneacetic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[2-[(7-methyl-1,2-benzisoxazol-3-yl)oxy]ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 30 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[4-[2-(1,2-Benzisoxazol-3-yloxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;



- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[2-(Benzoyloxy)ethyl]-2-(4-cyano-1-naphthalenyl)hexahydro-7-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)-4-[2-[(4-nitrobenzoyl)oxy]ethyl]hexahydro-7-methyl-4,7-epoxy-1H-isoindole-1,3(2H)-  
 5 dione;  
 4-Chlorobenzoic acid, 2-[(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-cyano-1-naphthalenyl)octahydro-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-y]ethyl ester;  
 [3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ (E)]-4-[Octahydro-4-methyl-7-[3-(1-naphthalenyl)-2-propenyl]-  
 10 1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[3-(1-naphthalenyl)propyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(2-methyl-6-quinoliny)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-Hexahydro-2-(5-isoquinoliny)-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(6-Benzothiazolyl)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;  
 [3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ (E)]-4-[Octahydro-4-methyl-1,3-dioxo-7-(4-oxo-4-phenyl-2-  
 20 butenyl)-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-(4-Cyano-1-naphthalenyl)octahydro-N-(2-hydroxyphenyl)-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindole-4-acetamide;  
 [3 $\alpha$ ,4 $\beta$ (E),7 $\beta$ ,7 $\alpha$ ]-4-[Octahydro-4-methyl-7-[3-(6-methyl-2-pyridinyl)-2-propenyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
 25 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[Octahydro-4-methyl-7-[3-(6-methyl-2-pyridinyl)propyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
 [3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-4-[2-(3-methoxyphenoxy)ethyl]-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;  
 [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[Octahydro-4-[2-(3-methoxyphenoxy)ethyl]-7-methyl-  
 30 1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;



- [3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-[2-(4-Cyanophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-[2-(4-Cyanophenoxy)ethyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 5 (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-4-[4-[(4-Fluorophenyl)methyl]octahydro-7-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-2-(trifluoromethyl)benzonitrile;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-Hexahydro-4,7-dimethyl-2-(1-methyl-6-oxo-3-piperidinyloxy)-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- (3 $\alpha$ ,4 $\alpha$ ,7 $\alpha$ ,7 $\alpha$ )-2-(1,6-Dihydro-1,4-dimethyl-6-oxo-3-pyridinyloxy)hexahydro-4,7-dimethyl-4,7-epoxy-1H-isoindole-1,3(2H)-dione;
- 10 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-1,3-dioxo-7-[2-(phenylmethoxy)ethyl]-4,7-epoxy-4H-isoindole-4-propanenitrile;
- (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-2-[4-Cyano-3-(trifluoromethyl)phenyl]octahydro-1,3-dioxo-7-[2-(phenylmethoxy)ethyl]-4,7-epoxy-4H-isoindole-4-propanenitrile;
- 15 (3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )-4-[7-[2-(4-Cyanophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-(1,3-Benzodioxol-5-yloxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 20 [3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-(1,3-Benzodioxol-5-yloxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-[(5-Chloro-2-pyridinyloxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 25 [3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-[(5-Chloro-2-pyridinyloxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-(4-Chlorophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 30



- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Chlorophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Acetylphenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 5 [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Acetylphenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(3-Cyanophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(3-Cyanophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 10 [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-1,3-dioxo-7-[2-[(5,6,7,8-tetrahydro-1-naphthalenyl)oxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-1,3-dioxo-7-[2-[(5,6,7,8-tetrahydro-1-naphthalenyl)oxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 15 [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-1,3-dioxo-7-[2-[(5,6,7,8-tetrahydro-5-oxo-1-naphthalenyl)oxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-1,3-dioxo-7-[2-[(5,6,7,8-tetrahydro-5-oxo-1-naphthalenyl)oxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 20 [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Fluorophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Fluorophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 25 [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-7-[2-[(4-methyl-2-oxo-2H-1-benzopyran-7-yl)oxy]ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;



- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-7-[2-[(4-methyl-2-oxo-2H-1-benzopyran-7-yl)oxy]ethyl]-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 5 [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(3,5-Dimethoxyphenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(3,5-Dimethoxyphenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- 10 [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Chloro-3-methylphenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-(4-Cyano-2,3-difluorophenoxy)ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-
- 15 naphthalenecarbonitrile;
- [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-[(5-Chloro-1,2-benzisoxazol-3-yl)oxy]ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-[(5-Chloro-1,2-benzisoxazol-3-
- 20 yl)oxy]ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-3-[2-[2-(4-Cyano-1-naphthalenyl)octahydro-6-hydroxy-7-methyl-1,3-dioxo-4,7-epoxy-4H-isoindol-4-yl]ethoxy]-5-isoxazolecarboxylic acid, methyl ester;
- 25 [3aR-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[Octahydro-5-hydroxy-4-methyl-1,3-dioxo-7-[2-[4-(1H-1,2,4-triazol-1-yl)phenoxy]ethyl]-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;
- [3aS-(3a $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7a $\alpha$ )]-4-[7-[2-[(7-Chloro-4-quinolinyl)oxy]ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-
- 30 naphthalenecarbonitrile, trifluoroacetate;



[3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[7-[2-[(7-Chloro-4-quinolinyloxy]ethyl]octahydro-5-hydroxy-4-methyl-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile, trifluoroacetate;

(1 $\alpha$ ,2 $\beta$ ,2 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,6 $\alpha$ )-4-[2-[2-[[[(1,1-dimethylethyl)-

5 dimethylsilyl]oxy]ethyl]octahydro- 6-methyl-3,5-dioxo-2,6-epoxy-4H-oxireno[f]isoindol-4-yl]-1-naphthalenecarbonitrile;

[3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-Ethyl octahydro-7-(2-hydroxyethyl)-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile;

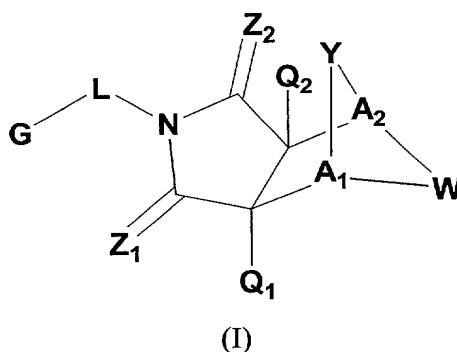
10 [3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-Ethyl octahydro-7-(2-hydroxyethyl)-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitril;

[3aR-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-[2-(4-Cyanophenoxy)ethyl]-7-ethyl octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile; and

[3aS-(3 $\alpha$ ,4 $\beta$ ,7 $\beta$ ,7 $\alpha$ )]-4-[4-[2-(4-Cyanophenoxy)ethyl]-7-ethyl octahydro-1,3-dioxo-4,7-epoxy-2H-isoindol-2-yl]-1-naphthalenecarbonitrile.

15

5. A pharmaceutical composition capable of treating a NHR - associated condition, comprising a compound of the following formula I or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier:



20

wherein the symbols have the following meanings and are, for each occurrence, independently selected:

25 G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which is optionally substituted at one or more positions;



$Z_1$  is O, S, NH, or  $NR^6$ ;

$Z_2$  is O, S, NH, or  $NR^6$ ;

$A_1$  is  $CR^7$  or N;

$A_2$  is  $CR^7$  or N;

- 5 Y is J-J'-J'' where J is  $(CR^7R^{7'})_n$  and  $n = 0-3$ , J' is a bond or O, S, S=O,  $SO_2$ , NH,  $NR^7$ , C=O, OC=O,  $NR^1C=O$ ,  $CR^7R^{7'}$ ,  $C=CR^8R^{8'}$ ,  $R^2P=O$ ,  $R^2P=S$ ,  $R^2OP=O$ ,  $R^2NHP=O$ ,  $OP=OOR^2$ ,  $OP=ONHR^2$ ,  $OP=OR^2$ ,  $OSO_2$ ,  $C=NR^7$ ,  $NHNH$ ,  $NHNR^6$ ,  $NR^6NH$ ,  $N=N$ , cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo or aryl or substituted aryl, and J'' is  $(CR^7R^{7'})_n$  and  $n = 0-3$ , where Y is not a bond;
- 10 W is  $CR^7R^{7'}-CR^7R^{7'}$ ,  $CR^8=CR^{8'}$ ,  $CR^7R^{7'}-C=O$ ,  $NR^9-CR^7R^{7'}$ ,  $N=CR^8$ ,  $N=N$ ,  $NR^9- NR^{9'}$ ,  $S-CR^7R^{7'}$ ,  $SO-CR^7R^{7'}$ ,  $SO_2-CR^7R^{7'}$ , cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein when W is not
- 15  $NR^9-CR^7R^{7'}$ ,  $N=CR^8$ ,  $N=N$ ,  $NR^9-NR^{9'}$ ,  $S-CR^7R^{7'}$ ,  $SO-CR^7R^{7'}$ ,  $SO_2- CR^7R^{7'}$ , or heterocyclo or substituted heterocyclo, then J' must be O, S, S=O,  $SO_2$ , NH,  $NR^7$ , OC=O,  $NR^1C=O$ ,  $OP=OOR^2$ ,  $OP=ONHR^2$ ,  $OSO_2$ ,  $NHNH$ ,  $NHNR^6$ ,  $NR^6NH$ , or  $N=N$ ;
- $Q_1$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^{7'}$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;
- 20  $Q_2$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^{7'}$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;
- 25  $Q_2$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^{7'}$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;
- 30  $Q_2$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^{7'}$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;



L is a bond,  $(CR^7R^7')_n$ , NH,  $NR^5$ ,  $NH(CR^7R^7')_n$  or  $NR^5(CR^7R^7')_n$ , where  $n = 0-3$ ;

$R^1$  and  $R^{1'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;

$R^2$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;

$R^3$  and  $R^{3'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, hydroxylamine, hydroxamide, alkoxy or substituted alkoxy, amino,  $NR^1R^2$ , thiol, alkylthio or substituted alkylthio;

$R^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;

$R^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;



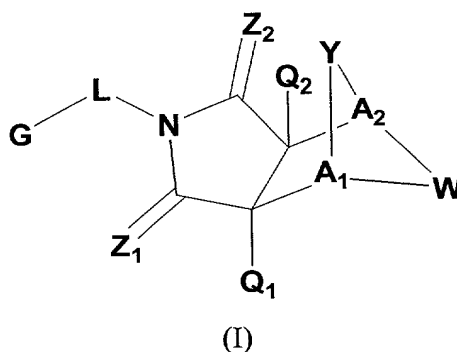
- $R^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^7$  and  $R^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN,  $OR^1$ , nitro, hydroxylamine, hydroxylamide, amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , thiol, alkylthio or substituted alkylthio,  $R^1C=O$ ,  $R^1OC=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SOR^1$ ,  $PO_3R^1R^{1'}$ ,  $R^1R^{1'}NC=O$ ,  $C=OSR^1$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ , or, wherein  $A_1$ , or  $A_2$  contains a group  $R^7$  and W contains a group  $R^7$ , said  $R^7$  groups of  $A_1$  or  $A_2$  and W together form a heterocyclic ring;
- $R^8$  and  $R^{8'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, nitro, halo, CN,  $OR^1$ , amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , alkylthio or substituted alkylthio,  $C=OSR^1$ ,  $R^1OC=O$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $R^1R^{1'}NC=O$ ,  $SO_2OR^1$ ,  $S=OR^1$ ,  $SO_2R^1$ ,  $PO_3R^1R^{1'}$ , or  $SO_2NR^1R^{1'}$ ;
- and
- $R^9$  and  $R^{9'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or



substituted aryl, arylalkyl or substituted arylalkyl, CN, OH, OR<sup>1</sup>, R<sup>1</sup>C=O,  
R<sup>1</sup>OC=O, R<sup>1</sup>NHC=O, SO<sub>2</sub>R<sup>1</sup>, SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>.

6. A pharmaceutical composition of Claim 5 further comprising another  
5 anti-cancer agent.

7. A method of modulating the function of a nuclear hormone receptor  
which comprises administering to a mammalian species in need thereof an effective  
nuclear hormone receptor modulating amount of a compound of the following  
10 formula I:



15 wherein the symbols have the following meanings and are, for each occurrence,  
independently selected:

G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which  
is optionally substituted at one or more positions;

Z<sub>1</sub> is O, S, NH, or NR<sup>6</sup>;

20 Z<sub>2</sub> is O, S, NH, or NR<sup>6</sup>;

A<sub>1</sub> is CR<sup>7</sup> or N;

A<sub>2</sub> is CR<sup>7</sup> or N;

Y is J-J'-J'' where J is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, J' is a bond or O, S, S=O, SO<sub>2</sub>, NH,

25 NR<sup>7</sup>, C=O, OC=O, NR<sup>1</sup>C=O, CR<sup>7</sup>R<sup>7'</sup>, C=CR<sup>8</sup>R<sup>8'</sup>, R<sup>2</sup>P=O, R<sup>2</sup>P=S, R<sup>2</sup>OP=O,  
R<sup>2</sup>NHP=O, OP=OOR<sup>2</sup>, OP=ONHR<sup>2</sup>, OP=OR<sup>2</sup>, OSO<sub>2</sub>, C=NR<sup>7</sup>, NHNH,  
NHNHNR<sup>6</sup>, NR<sup>6</sup>NH, N=N, cycloalkyl or substituted cycloalkyl, cycloalkenyl or



- substituted cycloalkenyl, heterocyclo or substituted heterocyclo or aryl or substituted aryl, and  $J''$  is  $(CR^7R^7')_n$  and  $n = 0-3$ , where Y is not a bond;
- W is  $CR^7R^7'—CR^7R^7'$ ,  $CR^8=CR^8'$ ,  $CR^7R^7'—C=O$ ,  $NR^9—CR^7R^7'$ ,  $N=CR^8$ ,  $N=N$ ,  $NR^9—NR^9'$ ,  $S—CR^7R^7'$ ,  $SO—CR^7R^7'$ ,  $SO_2—CR^7R^7'$ , cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein when W is not  $NR^9—CR^7R^7'$ ,  $N=CR^8$ ,  $N=N$ ,  $NR^9—NR^9'$ ,  $S—CR^7R^7'$ ,  $SO—CR^7R^7'$ ,  $SO_2—CR^7R^7'$ , or heterocyclo or substituted heterocyclo, then J' must be O, S, S=O,  $SO_2$ , NH,  $NR^7$ ,  $OC=O$ ,  $NR^1C=O$ ,  $OP=OOR^2$ ,  $OP=ONHR^2$ ,  $OSO_2$ ,  $NHNH$ ,  $NHNR^6$ ,  $NR^6NH$ , or  $N=N$ ;
- $Q_1$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^7'$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;
- $Q_2$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^7'$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;
- L is a bond,  $(CR^7R^7')_n$ , NH,  $NR^5$ ,  $NH(CR^7R^7')_n$  or  $NR^5(CR^7R^7')_n$ , where  $n = 0-3$ ;
- $R^1$  and  $R^{1'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;



- $R^2$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- $R^3$  and  $R^{3'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, hydroxylamine, hydroxamide, alkoxy or substituted alkoxy, amino,  $NR^1R^2$ , thiol, alkylthio or substituted alkylthio;
- $R^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;



- $R^7$  and  $R^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN,  $OR^1$ , nitro, hydroxylamine, hydroxylamide, amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , thiol, alkylthio or substituted alkylthio,  $R^1C=O$ ,  $R^1OC=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SOR^1$ ,  $PO_3R^1R^{1'}$ ,  $R^1R^{1'}NC=O$ ,  $C=OSR^1$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ , or, wherein  $A_1$  or  $A_2$  contains a group  $R^7$  and W contains a group  $R^7$ , said  $R^7$  groups of  $A_1$  or  $A_2$  and W together form a heterocyclic ring;
- $R^8$  and  $R^{8'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, nitro, halo, CN,  $OR^1$ , amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , alkylthio or substituted alkylthio,  $C=OSR^1$ ,  $R^1OC=O$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $R^1R^{1'}NC=O$ ,  $SO_2OR^1$ ,  $S=OR^1$ ,  $SO_2R^1$ ,  $PO_3R^1R^{1'}$ , or  $SO_2NR^1R^{1'}$ ;
- and
- $R^9$  and  $R^{9'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1OC=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ .

8. The method of Claim 7 wherein said nuclear hormone receptor is a steroid binding nuclear hormone receptor.



9. The method of Claim 7 wherein said nuclear hormone receptor is the androgen receptor.

10. The method of Claim 7 wherein said nuclear hormone receptor is the  
5 estrogen receptor.

11. The method of Claim 7 wherein said nuclear hormone receptor is the progesterone receptor.

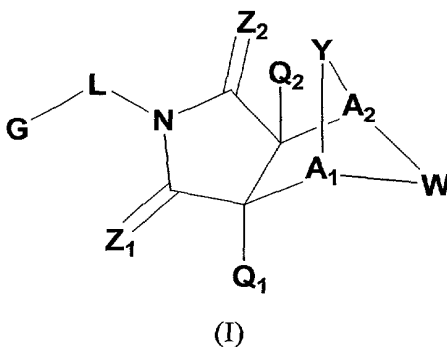
10 12. The method of Claim 7 wherein said nuclear hormone receptor is the glucocorticoid receptor.

13. The method of Claim 7 wherein said nuclear hormone receptor is the mineralocorticoid receptor.

15

14. The method of Claim 7 wherein said nuclear hormone receptor is the aldosterone receptor.

15. A method for treating a condition or disorder comprising administering  
20 to a mammalian species in need thereof a therapeutically effective amount of a compound of the following formula:



25



wherein the symbols have the following meanings and are, for each occurrence, independently selected:

G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which is optionally substituted at one or more positions;

5  $Z_1$  is O, S, NH, or  $NR^6$ ;

$Z_2$  is O, S, NH, or  $NR^6$ ;

$A_1$  is  $CR^7$  or N;

$A_2$  is  $CR^7$  or N;

Y is J-J'-J'' where J is  $(CR^7R^{7'})_n$  and  $n = 0-3$ , J' is a bond or O, S, S=O,  $SO_2$ , NH,

10  $NR^7$ , C=O, OC=O,  $NR^1C=O$ ,  $CR^7R^{7'}$ ,  $C=CR^8R^{8'}$ ,  $R^2P=O$ ,  $R^2P=S$ ,  $R^2OP=O$ ,  $R^2NHP=O$ ,  $OP=OOR^2$ ,  $OP=ONHR^2$ ,  $OP=OR^2$ ,  $OSO_2$ ,  $C=NR^7$ ,  $NHNH$ ,  $NHNR^6$ ,  $NR^6NH$ ,  $N=N$ , cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo or aryl or substituted aryl, and J'' is  $(CR^7R^{7'})_n$  and  $n = 0-3$ , where Y is not a bond;

15 W is  $CR^7R^{7'}-CR^7R^{7'}$ ,  $CR^8=CR^{8'}$ ,  $CR^7R^{7'}-C=O$ ,  $NR^9-CR^7R^{7'}$ ,  $N=CR^8$ ,  $N=N$ ,  $NR^9-NR^{9'}$ ,  $S-CR^7R^{7'}$ ,  $SO-CR^7R^{7'}$ ,  $SO_2-CR^7R^{7'}$ , cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein when W is not  $NR^9-CR^7R^{7'}$ ,  $N=CR^8$ ,  $N=N$ ,  $NR^9-NR^{9'}$ ,  $S-CR^7R^{7'}$ ,  $SO-CR^7R^{7'}$ ,  $SO_2-$   
20  $CR^7R^{7'}$ , or heterocyclo or substituted heterocyclo, then J' must be O, S, S=O,  $SO_2$ , NH,  $NR^7$ , OC=O,  $NR^1C=O$ ,  $OP=OOR^2$ ,  $OP=ONHR^2$ ,  $OSO_2$ ,  $NHNH$ ,  $NHNR^6$ ,  $NR^6NH$ , or  $N=N$ ;

$Q_1$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,

25 heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^{7'}$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;

$Q_2$  is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or

30 substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,



- heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN,  $R^1OC=O$ ,  $R^4C=O$ ,  $R^5R^6NC=O$ ,  $HO-CR^7R^{7'}$ , nitro,  $R^1OCH_2$ ,  $R^1O$ ,  $NH_2$ ,  $C=OSR^1$ ,  $SO_2R^1$  or  $NR^4R^5$ ;
- 5 L is a bond,  $(CR^7R^{7'})_n$ , NH,  $NR^5$ ,  $NH(CR^7R^{7'})_n$  or  $NR^5(CR^7R^{7'})_n$ , where  $n = 0-3$ ;
- $R^1$  and  $R^{1'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 10  $R^2$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 15  $R^3$  and  $R^{3'}$  are each independently H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 20  $R^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, hydroxylamine, hydroxamide, alkoxy or substituted alkoxy, amino,  $NR^1R^2$ , thiol, alkylthio or substituted alkylthio;
- 25  $R^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;
- 30



cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;

- 5  $R^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  
 10  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;
- $R^7$  and  $R^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted  
 15 cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN,  $OR^1$ , nitro, hydroxylamine, hydroxylamide, amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , thiol, alkylthio or substituted alkylthio,  $R^1C=O$ ,  $R^1OC=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SOR^1$ ,  $PO_3R^1R^{1'}$ ,  $R^1R^{1'}NC=O$ ,  $C=OSR^1$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ , or, wherein  
 20  $A_1$  or  $A_2$  contains a group  $R^7$  and W contains a group  $R^7$ , said  $R^7$  groups of  $A_1$  or  $A_2$  and W together form a heterocyclic ring;
- $R^8$  and  $R^{8'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl,  
 25 heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, nitro, halo, CN,  $OR^1$ , amino,  $NHR^4$ ,  $NR^2R^5$ ,  $NOR^1$ , alkylthio or substituted alkylthio,  $C=OSR^1$ ,  $R^1OC=O$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $R^1R^{1'}NC=O$ ,  $SO_2OR^1$ ,  $S=OR^1$ ,  $SO_2R^1$ ,  $PO_3R^1R^{1'}$ , or  $SO_2NR^1R^{1'}$ ;  
 30 and

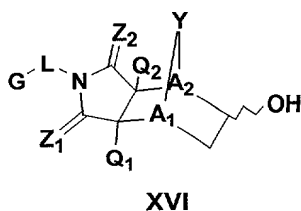


R<sup>9</sup> and R<sup>9'</sup> are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH, OR<sup>1</sup>, R<sup>1</sup>C=O, R<sup>1</sup>OC=O, R<sup>1</sup>NHC=O, SO<sub>2</sub>R<sup>1</sup>, SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>;

wherein said condition or disorder is selected from the group consisting of proliferate diseases, cancers, benign prostate hypertrophy, adenomas and neoplasies of the prostate, benign or malignant tumor cells containing the androgen receptor, heart disease, angiogenic conditions or disorders, hirsutism, acne, hyperpilosity, inflammation, immune modulation, seborrhea, endometriosis, polycystic ovary syndrome, androgenic alopecia, hypogonadism, osteoporosis, suppressing spermatogenesis, libido, cachexia, anorexia, inhibition of muscular atrophy in ambulatory patients, androgen supplementation for age related decreased testosterone levels in men, cancers expressing the estrogen receptor, prostate cancer, breast cancer, endometrial cancer, hot flushes, vaginal dryness, menopause, amenorrhea, dysmenorrhea, contraception, pregnancy termination, cancers containing the progesterone receptor, endometriosis, cachexia, menopause, cyclesynchrony, meningioma, fibroids, labor induction, autoimmune diseases, Alzheimer's disease, psychotic disorders, drug dependence, non-insulin dependent Diabetes Mellitus, dopamine receptor mediated disorders, congestive heart failure, dysregulation of cholesterol homeostasis, and attenuating the metabolism of a pharmaceutical agent.

16. A method for preparation of a compound of the following formula XVI, or salt thereof:





where

G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which

5 is optionally substituted at one or more positions;

Z<sub>1</sub> is O, S, NH, or NR<sup>6</sup>;

Z<sub>2</sub> is O, S, NH, or NR<sup>6</sup>;

A<sub>1</sub> is CR<sup>7</sup> or N;

A<sub>2</sub> is CR<sup>7</sup> or N;

10 Y' is J-J'-J'' where J is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, J' is O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>,  
OP=OOR<sup>2</sup>, OC=O, NR<sup>1</sup>C=O, OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHNH, NHR<sup>6</sup>, NR<sup>6</sup>NH,  
or N=N, and J'' is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3;

Q<sub>1</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or  
substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,

15 heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted  
arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo  
or substituted heterocyclo, halo, CN, R<sup>1</sup>OC=O, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O,  
HO CR<sup>7</sup>R<sup>7'</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup> or NR<sup>4</sup>R<sup>5</sup>;

Q<sub>2</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or

20 substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,  
heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted  
arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo  
or substituted heterocyclo, halo, CN, R<sup>1</sup>OC=O, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O,  
HO CR<sup>7</sup>R<sup>7'</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup> or NR<sup>4</sup>R<sup>5</sup>;

25 L is a bond, (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub>, NH, NR<sup>5</sup> or NR<sup>5</sup>(CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub>, where n = 0-3;

R<sup>1</sup> and R<sup>1'</sup> are each independently H, alkyl or substituted alkyl, cycloalkyl or  
substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo  
or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl,



cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;

5  $R^2$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;

10  $R^4$  is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;

15  $R^5$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ;

20

$R^6$  is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH,  $OR^1$ ,  $R^1C=O$ ,  $R^1NHC=O$ ,  $SO_2R^1$ ,  $SO_2OR^1$ , or  $SO_2NR^1R^{1'}$ ; and

25

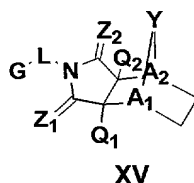
$R^7$  and  $R^{7'}$  are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or

30



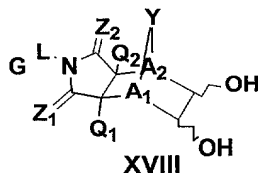
substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, OR<sup>1</sup>, nitro, hydroxylamine, hydroxylamide, amino, NHR<sup>4</sup>, NR<sup>2</sup>R<sup>5</sup>, NOR<sup>1</sup>, thiol, alkylthio or substituted alkylthio, R<sup>1</sup>C=O, R<sup>1</sup>OC=O, R<sup>1</sup>NHC=O, SO<sub>2</sub>R<sup>1</sup>, SOR<sup>1</sup>, PO<sub>3</sub>R<sup>1</sup>R<sup>1'</sup>, R<sup>1</sup>R<sup>1'</sup>NC=O, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup>, SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>;

- 5 comprising the steps of contacting a compound of the following formula XV, or salt thereof:



- 10 where the symbols are as defined above;  
with an enzyme or microorganism capable of catalyzing the hydroxylation of said compound XV to said compound XVI, and effecting said hydroxylation.

- 15 17. A method for preparation of a compound of the following formula XVIII, or salt thereof:



- 20 where  
G is an aryl or heterocyclo group, where said group is mono- or polycyclic, and which is optionally substituted at one or more positions;  
Z<sub>1</sub> is O, S, NH, or NR<sup>6</sup>;  
Z<sub>2</sub> is O, S, NH, or NR<sup>6</sup>;  
A<sub>1</sub> is CR<sup>7</sup> or N;  
25 A<sub>2</sub> is CR<sup>7</sup> or N;  
Y' is J-J'-J'' where J is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, J' is O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>, OP=OOR<sup>2</sup>, OC=O, NR<sup>1</sup>C=O, OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHNH, NHNR<sup>6</sup>, NR<sup>6</sup>NH, or N=N, and J'' is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3;



- Q<sub>1</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo
- 5 or substituted heterocyclo, halo, CN, R<sup>1</sup>OC=O, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O, HO CR<sup>7</sup>R<sup>7'</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup> or NR<sup>4</sup>R<sup>5</sup>;
- Q<sub>2</sub> is H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted
- 10 arylalkyl, alkynyl or substituted alkynyl, aryl or substituted aryl, heterocyclo or substituted heterocyclo, halo, CN, R<sup>1</sup>OC=O, R<sup>4</sup>C=O, R<sup>5</sup>R<sup>6</sup>NC=O, HO CR<sup>7</sup>R<sup>7'</sup>, nitro, R<sup>1</sup>OCH<sub>2</sub>, R<sup>1</sup>O, NH<sub>2</sub>, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup> or NR<sup>4</sup>R<sup>5</sup>;
- L is a bond, (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub>, NH, NR<sup>5</sup> or NR<sup>5</sup>(CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub>, where n = 0-3;
- R<sup>1</sup> and R<sup>1'</sup> are each independently H, alkyl or substituted alkyl, cycloalkyl or
- 15 substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 20 R<sup>2</sup> is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl;
- 25 R<sup>4</sup> is H, alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, R<sup>1</sup>C=O, R<sup>1</sup>NHC=O,
- 30 SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>;

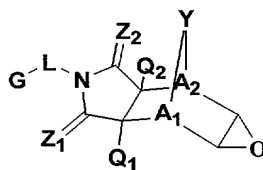


R<sup>5</sup> is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, R<sup>1</sup>C=O, R<sup>1</sup>NHC=O, SO<sub>2</sub>R<sup>1</sup>, SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>;

R<sup>6</sup> is alkyl or substituted alkyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, CN, OH, OR<sup>1</sup>, R<sup>1</sup>C=O, R<sup>1</sup>NHC=O, SO<sub>2</sub>R<sup>1</sup>, SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>; and

R<sup>7</sup> and R<sup>7'</sup> are each independently H, alkyl or substituted alkyl, alkenyl or substituted alkenyl, cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl, heterocyclo or substituted heterocyclo, cycloalkylalkyl or substituted cycloalkylalkyl, cycloalkenylalkyl or substituted cycloalkenylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, arylalkyl or substituted arylalkyl, halo, CN, OR<sup>1</sup>, nitro, hydroxylamine, hydroxylamide, amino, NHR<sup>4</sup>, NR<sup>2</sup>R<sup>5</sup>, NOR<sup>1</sup>, thiol, alkylthio or substituted alkylthio, R<sup>1</sup>C=O, R<sup>1</sup>OC=O, R<sup>1</sup>NHC=O, SO<sub>2</sub>R<sup>1</sup>, SOR<sup>1</sup>, PO<sub>3</sub>R<sup>1</sup>R<sup>1'</sup>, R<sup>1</sup>R<sup>1'</sup>NC=O, C=OSR<sup>1</sup>, SO<sub>2</sub>R<sup>1</sup>, SO<sub>2</sub>OR<sup>1</sup>, or SO<sub>2</sub>NR<sup>1</sup>R<sup>1'</sup>;

comprising the steps of contacting a compound of the following formula XVII, or salt thereof:

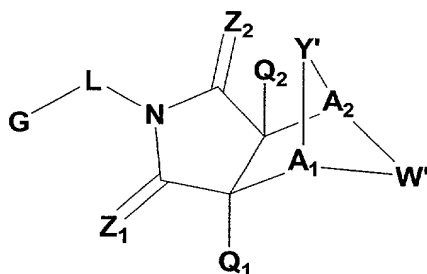


XVII

where the symbols are as defined above;  
with an enzyme or microorganism capable of catalyzing the opening of the epoxide ring of compound XVII to form the diol of said compound XVIII, and effecting said ring opening and diol formation.



18. A compound of the following formula Ib:



Ib

where G, Z<sub>1</sub>, Z<sub>2</sub>, Q<sub>1</sub> and Q<sub>2</sub> are as defined in claim 1;

Y' is J-J'-J'' where J is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, J' is a bond or O, S, S=O, SO<sub>2</sub>, NH,

NR<sup>7</sup>, CR<sup>7</sup>R<sup>7'</sup>, R<sup>2</sup>P=O, R<sup>2</sup>P=S, R<sup>2</sup>OP=O, R<sup>2</sup>NHP=O, OP=OOR<sup>2</sup>, OP=ONHR<sup>2</sup>,  
10 OSO<sub>2</sub>, NHHN, NHR<sup>6</sup>, NR<sup>6</sup>NH, N=N, cycloalkyl or substituted cycloalkyl,  
cycloalkenyl or substituted cycloalkenyl, or heterocyclo or substituted  
heterocyclo, and J'' is (CR<sup>7</sup>R<sup>7'</sup>)<sub>n</sub> and n = 0-3, where Y is not a bond; and

W' is CR<sup>7</sup>R<sup>7'</sup>-CR<sup>7</sup>R<sup>7'</sup>, CR<sup>7</sup>R<sup>7'</sup>-C=O, NR<sup>9</sup>-CR<sup>7</sup>R<sup>7'</sup>, N=CR<sup>8</sup>, N=N, NR<sup>9</sup>-NR<sup>9'</sup>,  
cycloalkyl or substituted cycloalkyl, cycloalkenyl or substituted cycloalkenyl,  
15 heterocyclo or substituted heterocyclo, or aryl or substituted aryl, wherein,

when W' is not NR<sup>9</sup>-CR<sup>7</sup>R<sup>7'</sup>, N=CR<sup>8</sup>, N=N, NR<sup>9</sup>-NR<sup>9'</sup>, or heterocyclo or substituted  
heterocyclo, then J' must be O, S, S=O, SO<sub>2</sub>, NH, NR<sup>7</sup>, OP=OOR<sup>2</sup>,  
OP=ONHR<sup>2</sup>, OSO<sub>2</sub>, NHHN, NHR<sup>6</sup>, NR<sup>6</sup>NH, or N=N; or alternatively,

Y' is CR<sup>7</sup>R<sup>7'</sup>-C=O and W' is NR<sup>9</sup>-CR<sup>7</sup>R<sup>7'</sup>;

20 L is a bond; and

A<sub>1</sub> and A<sub>2</sub> are as defined above with the proviso that, when Y' = O and W' = -CH<sub>2</sub>-  
CH<sub>2</sub>-, then at least one of A<sub>1</sub> or A<sub>2</sub> is not CH;

with the further provisos (2), (3), (6), (7) and (8) of claim 1.